



1803 Philadelphia Street  
Indiana, PA 15701  
P: (724) 463-8378  
F: (724) 465-4209  
PADEP: 32-00382

1276 Bentleyville Road  
Van Voorhis, PA 15366  
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435 Broad Street  
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F: (570) 321-1957  
PADEP: 41-04880

950 West Main Street  
Sharpsville, PA 16150  
P: (724) 463-8378 x 500  
F: (724) 465-4209  
PADEP: 43-04934

12 November 2018

Seneca Nation Health System  
Attn: Shannon Seneca  
987 RC Hoag Drive  
Salamanca, NY 14779

**Work Order: 8100282**  
**Project: SOC, VOC, Organics and Metals**  
**Project Description: SOC, VOC, Organics and Metals**

## Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SCWS (raw)	8100282-01	Drinking Water	10/01/2018 09:59	10/2/18 19:10	
SCWS (raw) Trip Blank	8100282-02	Drinking Water	10/01/2018 00:00	10/2/18 19:10	

### Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

### Definitions

RL Reporting Limit

### Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

### Approved By

Sean Mintzer for Jessica Stile  
Project Manager



# ENVIRONMENTAL SERVICE LABORATORIES, INC.

## SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 1 OF 5

**HEADQUARTERS**  
1803 Philadelphia St.  
Indiana, PA 15701  
(724) 463-TEST  
FAX: (724) 465-4209

**SOUTHERN DIVISION**  
1276 Bentleyville Road  
Van Voorhis, PA 15366  
(724) 258-TEST  
FAX: (724) 258-8376

**NORTHERN DIVISION**  
1200 River Avenue  
Williamsport, PA 17701  
(570) 321-9003  
FAX: (570) 321-1957



8100282

FOR INTERNAL LABORATORY USE ONLY

Page 2 of 19

Sample Identification	ESL#	Sample Type				Matrix	# of Containers	Container Type	Analysis Requested
		Composite		Grab					
		Date on/off	Time on/off	Date	Time				
	8100282							Preservative	
SCWS (raw)	01			10/1/18	10:16	DW	2 ✓	40 ML CLEAR VIAL Na2S2O3	SOC 504
				10/1/18	10:14	DW	2 ✓	40 ML CLEAR VIAL Na2S2O3	SOC 505
				10/1/18	10:01/ 10:12	DW	4 ✓	250 ML AMBER GLASS Na2S2O3	SOC 515 / SOC 548
				10/1/18	10:10	DW	1 ✓	AMBER GLASS Sodium Sulfite/HCL	SOC 525
				10/1/18	9:59	DW	1 ✓	AMBER GLASS Na2S2O3	SOC 1613
				10/1/18	10:20	DW	2 ✓	40 ML CLEAR VIAL Na2S2O3	SOC 547
				10/1/18	10:08	DW	1 ✓	1 L HDPE AMBER Na2S2O3	SOC 549
				10/1/18	10:05	DW	2 ✓	40 ML AMBER VIAL MAB BUFFER	SOC 531.1
	01			10/1/18	10:05		1 ✓	250 ML AMBER GLASS Na2S2O3	For 531.1 collection only. Follow sampling instructions on kit to fill 2 sample vials
Trip Blank	02					DW	2 ✓	40 ML CLEAR VIAL Na2S2O3	SOC 504

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.

- THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
- THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

*Rosalind Z. Brand* 10/2/18 10:20

Sampled By: (Signature) Date/ Time

*Rosalind Z. Brand* 10/2/18

Relinquished By: (Signature) Date/ Time

*[Signature]* 10-2-18 1448

Relinquished By: (Signature) Date/ Time

*[Signature]*

Relinquished By: (Signature) Date/ Time

*[Signature]*

Relinquished By: (Signature) Date/ Time

*[Signature]*

Relinquished By: (Signature) Date/ Time

*[Signature]*

Relinquished By: (Signature) Date/ Time

*[Signature]* 10-2-18 1100

Received By: (Signature) Date/ Time

*[Signature]*

Received By: (Signature) Date/ Time

*[Signature]*

Received By: (Signature) Date/ Time

*[Signature]*

Received By: (Signature) Date/ Time

*[Signature]*

Received By: (Signature) Date/ Time

*[Signature]*

Received By: (Signature) Date/ Time

*[Signature]*

Project Notes:

### EPA Compliance Sampling

Company/Name: **Seneca Nation HEALTH**

Contact Person: **Shannon Seneca**

Address: **987 RC Hoag Drive**

**Salamanca, NY 14779**

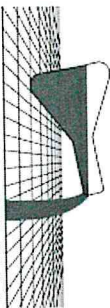
Phone: **716-954-5894**

Email: [sseneca@senecahealth.org](mailto:sseneca@senecahealth.org)

Lab Use Only: Correct Preservation: Y / N / N/A

Correct Container: Y / N / N/A

TEMPERATURE:



**ENVIRONMENTAL**  
SERVICE LABORATORIES, INC.

## SAMPLE RECEIPT AND REVIEW FORM

### PART A: General Information



8100282

Client: <u>Seneca Nation (SOC)</u>		Work Order: _____	
Received by: <u>LD</u>	Date/Time Received: <u>10/2/18 1910</u>	Date Sampled: <u>10/1/18</u>	
Method of Delivery: FedEx UPS	Client Drop off: <u>ESL courier</u>	Other: _____	
Sample Receipt Temp: <u>1.9</u>	IR Gun # Used: <u>1 2 3 4</u>	Samples Received on Ice: <u>YES</u>	NO
Samples Removed by Satellite Lab Division: Southern(BV) Northwest(NW) Northern(WP)		Containers removed by Satellite Lab for analysis of:	TCMPN    Fecal Coliform    TC/EC ECMPN
Sample State of Collection: <u>PA</u> NY OH WV Other: _____		PWSID COMPLIANCE DRINKING WATER SAMPLES: YES <u>NO</u>	

### PART B: Receipt Details

Completed (if different from above):

Signature LDDate 10/3/18 Time 1245

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)	Deficiency Log Required
1 Chain of custody documents included with samples?	Yes No N/A	Comments:	YES NO
2 COC form is properly signed in relinquished/received sections?	Yes No N/A	Comments:	YES NO
3 Sample containers intact and sealed?	Yes No N/A	Circle Applicable: Damaged container Leaking container Custody Seal Broken Other: Sample ID's affected:	YES NO
4 Number of containers received match number indicated on COC?	Yes No N/A	Sample ID's and containers affected:	YES NO
5 Sample ID's on COC match ID's on bottles?	Yes No N/A	Sample ID's affected:	YES NO
6 Date and time on COC match date and time on bottles?	Yes No N/A	ID's and tests affected:	YES NO
7 Samples received within holding time?	Yes No N/A	Sample ID's, containers affected and observed pH:	YES NO
8 Samples received at appropriate pH for analysis requested?	Yes <u>NO</u> N/A	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable condition as the cooling process has begun.	YES NO
9 Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	Yes No N/A	Analyses Affected:	YES NO
11 Adequate sample volume received?	Yes No N/A	Sample ID's and containers affected:	YES NO
10 VOA vials free of headspace (defined as < 6mm bubble)?	Yes No N/A		YES NO
Other Comments:			Deficiency Log Created: YES NO



November 12, 2018

Reporting Group  
Environmental Service Laboratories, Inc.  
1803 Philadelphia Street  
Indiana, PA 15701

## Certificate of Analysis

Project Name: **8100282**Workorder: **2342374**

Purchase Order:

Workorder ID: **8100282**

Dear Reporting Group:

Enclosed are the analytical results for samples received by the laboratory on Thursday, October 4, 2018.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Amy K Borden (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Accounts Payable

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Ms. Amy K Borden  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2342374 8100282

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2342374001	8100282-01	Drinking Water	10/1/2018 09:59	10/4/2018 10:25	Collected by Client
2342374002	8100282-02	Drinking Water	10/1/2018 00:00	10/4/2018 10:25	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2342374 8100282

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2342374 8100282

### Workorder Comments

See attached subcontract dioxin data from ALS Burlington. AKB 11/12/18

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## ANALYTICAL RESULTS

Workorder: 2342374 8100282

Lab ID: **2342374001**  
Sample ID: **8100282-01**

Date Collected: 10/1/2018 09:59 Matrix: Drinking Water  
Date Received: 10/4/2018 10:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
<b>Sub'd-CASH Labs</b>										
Dioxin	SEE ATTACHE D FROM ALS BURLING TON		ug/L		EPA 1613B			11/8/18 00:00	SUB	C
<b>VOLATILE ORGANICS</b>										
1,2-Dibromo-3-chloropropane	ND		ug/L	0.019	EPA 504.1	10/11/18 01:05	EGO	10/11/18 08:01	EGO	P
1,2-Dibromoethane	ND		ug/L	0.019	EPA 504.1	10/11/18 01:05	EGO	10/11/18 08:01	EGO	P
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1-Chloro-2-Fluorobenzene (S)	86.2		%	70 - 130	EPA 504.1	10/11/18 01:05	EGO	10/11/18 08:01	EGO	P
<b>SEMIVOLATILES</b>										
Alachlor	ND		ug/L	0.19	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Atrazine	ND		ug/L	0.19	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
gamma-BHC	ND		ug/L	0.094	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Benzo(a)pyrene	ND		ug/L	0.094	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Endrin	ND		ug/L	0.19	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Di(2-Ethylhexyl)adipate	ND		ug/L	0.94	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
bis(2-Ethylhexyl)phthalate	ND		ug/L	0.94	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Heptachlor	ND		ug/L	0.094	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Heptachlor Epoxide	ND		ug/L	0.094	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Hexachlorobenzene	ND		ug/L	0.094	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Hexachlorocyclopentadiene	ND		ug/L	0.19	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Methoxychlor	ND		ug/L	0.19	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Simazine	ND		ug/L	0.19	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,3-Dimethyl-2-Nitrobenzene (S)	87.9		%	70 - 130	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
IS_Perylene-d12 (S)	99.2		%	70 - 130	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Pyrene-d10 (S)	99		%	70 - 130	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
Triphenylphosphate (S)	94.5		%	70 - 130	EPA 525.2	10/8/18 02:15	KMR	10/8/18 14:01	CGS	E1
<b>PESTICIDES</b>										
Chlordane	ND	1	ug/L	0.48	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
Polychlorinated Biphenyls			ug/L	3.4	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
Toxaphene	ND		ug/L	1.9	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I

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## ANALYTICAL RESULTS

Workorder: 2342374 8100282

Lab ID: **2342374001**  
Sample ID: **8100282-01**

Date Collected: 10/1/2018 09:59 Matrix: Drinking Water  
Date Received: 10/4/2018 10:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Aroclor-1016	ND		ug/L	0.48	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
Aroclor-1221	ND		ug/L	0.48	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
Aroclor-1232	ND		ug/L	0.48	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
Aroclor-1242	ND		ug/L	0.48	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
Aroclor-1248	ND		ug/L	0.48	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
Aroclor-1254	ND		ug/L	0.48	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
Aroclor-1260	ND		ug/L	0.48	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
Tetrachloro-m-xylene (S)	89.1	2	%	70 - 130	EPA 505	10/8/18 14:00	JXS	10/8/18 16:53	JXS	I
<b>HERBICIDES</b>										
2,4-D	ND		ug/L	1.0	EPA 515.3	10/9/18 17:00	AT	10/9/18 23:48	EGO	A
Dalapon	ND		ug/L	4.0	EPA 515.3	10/9/18 17:00	AT	10/9/18 23:48	EGO	A
Dinoseb	ND		ug/L	1.0	EPA 515.3	10/9/18 17:00	AT	10/9/18 23:48	EGO	A
Diquat	ND		ug/L	2.0	EPA 549.2	10/8/18 15:30	AT	10/16/18 08:36	AJL	K
Endothall	ND		ug/L	20.0	EPA 548.1	10/8/18 19:15	AT	10/10/18 13:26	CGS	L
Glyphosate	ND		ug/L	25.0	EPA 547			10/5/18 20:11	CGS	N
Pentachlorophenol	ND		ug/L	0.19	EPA 515.3	10/9/18 17:00	AT	10/9/18 23:48	EGO	A
Picloram	ND		ug/L	2.0	EPA 515.3	10/9/18 17:00	AT	10/9/18 23:48	EGO	A
2,4,5-TP	ND		ug/L	0.50	EPA 515.3	10/9/18 17:00	AT	10/9/18 23:48	EGO	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
2,4-Dichlorophenylacetic acid (S)	81		%	70 - 130	EPA 515.3	10/9/18 17:00	AT	10/9/18 23:48	EGO	A
<b>CARBAMATES</b>										
Carbofuran	ND		ug/L	1.0	EPA 531.1			10/9/18 04:53	CGS	G
Oxamyl	ND		ug/L	1.0	EPA 531.1			10/9/18 04:53	CGS	G



Ms. Amy K Borden  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2342374 8100282

Lab ID: **2342374002**  
Sample ID: **8100282-02**

Date Collected: 10/1/2018 00:00 Matrix: Drinking Water  
Date Received: 10/4/2018 10:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS</b>										
1,2-Dibromo-3-chloropropane	ND		ug/L	0.019	EPA 504.1	10/11/18 01:05	EGO	10/11/18 07:37	EGO	A
1,2-Dibromoethane	ND		ug/L	0.019	EPA 504.1	10/11/18 01:05	EGO	10/11/18 07:37	EGO	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1-Chloro-2-Fluorobenzene (S)	86		%	70 - 130	EPA 504.1	10/11/18 01:05	EGO	10/11/18 07:37	EGO	A



Ms. Amy K Borden  
Project Coordinator

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**ANALYTICAL RESULTS**

Workorder: 2342374 8100282

**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2342374001</b>	1	8100282-01	EPA 505	Chlordane
The QC sample type MS for method EPA 505 was outside the control limits for the analyte Chlordane. The % Recovery was reported as 56.7 and the control limits were 65 to 135.				
<b>2342374001</b>	2	8100282-01	EPA 505	Tetrachloro-m-xylene
This sample was extracted with an associated matrix spike sample. The surrogate in the matrix spike for method EPA 505 was outside the control limits. The % Recovery was reported as 47.1 and the control limits were 70 to 130.				

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### ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 2342374 8100282

Lab ID	Sample ID	Analysis Method	Prep Method
2342374001	8100282-01	EPA 1613B	
2342374001	8100282-01	EPA 504.1	EPA 504.1
2342374001	8100282-01	EPA 505	EPA 505
2342374001	8100282-01	EPA 515.3	EPA 515.3
2342374001	8100282-01	EPA 525.2	EPA 525.2
2342374001	8100282-01	EPA 531.1	
2342374001	8100282-01	EPA 547	
2342374001	8100282-01	EPA 548.1	EPA 548.1
2342374001	8100282-01	EPA 549.2	EPA 549.2
2342374002	8100282-02	EPA 504.1	EPA 504.1

### ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey



## SUBCONTRACT ORDER

Environmental Service Laboratories, Inc.

8100282



Please report all results to reports@envlabs.com. Contact ESL with any questions.

## SENDING LABORATORY:

Environmental Service Laboratories, Inc.  
1803 Philadelphia Street  
Indiana, PA 15701  
Phone: 724-463-8378  
Fax: 724-465-4209  
Project Manager: Jessica Stile

## RECEIVING LABORATORY:

ALS Environmental  
34 Dogwood Lane  
Middletown, PA 17057  
Phone: 717/944-5541  
Fax: 717/944-1430

State of Origin: NY

Client: Seneca Nation Health System

PWSID:

Analysis	Due	Expires	Comments
Sample ID: 8100282-01    Sample Name: SCWS (raw)			
Matrix: Drinking Water    Sampled: 10/01/2018 09:59    Sample Type: Grab    Sampled By: Client			
SOC 1613 2,3,7,8 TCDD Dioxin	10/15/2018 23:00	10/01/2019 09:59	
SOC 504	10/15/2018 23:00	10/15/2018 09:59	
SOC 505	10/15/2018 23:00	10/15/2018 09:59	
SOC 515	10/15/2018 23:00	10/15/2018 09:59	
SOC 525 Pesticides	10/15/2018 23:00	10/15/2018 09:59	
SOC 531.2	10/15/2018 23:00	10/29/2018 09:59	
SOC 547 Glyphosate	10/15/2018 23:00	10/15/2018 09:59	
SOC 548.1 Endothall	10/15/2018 23:00	10/08/2018 09:59	
SOC 549 Diquat	10/15/2018 23:00	10/08/2018 09:59	
Containers Supplied:			
Amber Glass, 1000mL; Na2S2O3 (A) ✓	VOA Vial, 40mL; Na2S2O3 (B) ✓	VOA Vial, 40mL; Na2S2O3 (C) ✓	VOA Vial, 40mL; Na2S2O3 (D) ✓
Amber Glass, 250mL; Na2S2O3 (F) ✓	Amber Glass, 250mL; Na2S2O3 (G) ✓	Amber Glass, 1000mL; Na2SO3 and HCL (H) ✓	VOA Vial, Amber, 40mL; MAB Buffer (I) ✓
Amber Glass, 250mL; Na2S2O3 (K) ✓	Amber Glass, 250mL; Na2S2O3 (L) ✓	Amber HDPE, 1000mL; Na2S2O3 (M) ✓	VOA Vial, 40mL; Na2S2O3 (N) ✓
			VOA Vial, 40mL; Na2S2O3 (O) ✓

Sample ID: 8100282-02    Sample Name: SCWS (raw) Trip Blank

Matrix: Drinking Water    Sampled: 10/01/2018 00:00    Sample Type: Grab    Sampled By: Client

SOC 504    10/15/2018 23:00    10/15/201

Containers Supplied:

VOA Vial, 40mL; Na2S2O3 (A) ✓    VOA Vial, 40mL; Na2S2O3 (B) ✓

	Y	N	Initials	Cooler Temp: °C
Custody Seals Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US	
(if present) Seals Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Cooler #:
Received on Ice?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
COC/Lbls Complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Therm ID:
Cont in Good Cond?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Correct Containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Ship Carrier
Correct Samp Vol?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		FedEx    UPS
Correct Preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		DHL
Headspace/Volatiles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Tracking #: 1Z E98 E2601 3910 3145

Released By

Date

Received By

Date

Released By

Date

Received By

Date



ALS Group USA - Middletown  
ATTN: Amy Borden  
34 Dogwood Lane  
Middletown PA 17057

Date Received: 09-OCT-18  
Report Date: 09-NOV-18 14:34 (MT)  
Version: FINAL

Client Phone: 717-944-5541

## Certificate of Analysis

**Lab Work Order #: L2177662**

Project P.O. #: 2342374

Job Reference: 2342374

C of C Numbers:

Legal Site Desc:

Claire Kocharakkal, B.Sc.  
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1435 Norjohn Court, Unit 1, Burlington, ON, L7L 0E6 Canada | Phone: +1 905 331 3111 | Fax: +1 905 331 4567  
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Environmental

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**ALS ENVIRONMENTAL ANALYTICAL REPORT**[illegible]

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.



## Reference Information

**Sample Parameter Qualifier Key:**

Qualifier	Description
[U]	The analyte was not detected above the EDL.

**Test Method References:**

ALS Test Code	Matrix	Test Description	Method Reference**
DX-2378TCDD-HRMS-BU	Water	Dioxins 2378 TCDD by 1613B	EPA 1613B

\*\* ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
BU	ALS ENVIRONMENTAL - BURLINGTON, ONTARIO, CANADA

**Chain of Custody Numbers:****GLOSSARY OF REPORT TERMS**

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww t - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.





## Quality Control Report

Workorder: L2177662

Report Date: 09-NOV-18

Page 1 of 2

Client: ALS Group USA - Middletown  
34 Dogwood Lane  
Middletown PA 17057

Contact: Amy Borden

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-2378TCDD-HRMS-BU	Water							
Batch	R4325241							
WG2908340-2	LCS							
2,3,7,8-TCDD			104.0		%		67-158	06-NOV-18
WG2908340-1	MB							
2,3,7,8-TCDD			<0.26	[U]	pg/L		0.26	06-NOV-18
Surrogate: 13C12-2,3,7,8-TCDD			65.0		%		20-175	06-NOV-18

# Quality Control Report

Workorder: L2177662

Report Date: 09-NOV-18

Page 2 of 2

## Legend:

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Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

## Sample Parameter Qualifier Definitions:

---

Qualifier	Description
[U]	The analyte was not detected above the EDL.

---

## Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

---

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

**CHAIN OF CUSTODY/  
REQUEST FOR ANALYSIS**

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT ;  
SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: L2177662

1 of 1

ALS Quote #:

Client Name: ALS Environmental		Container Type	AN									Receipt Information (completed by Receiving Lab)											
Address: 34 Dogwood Lane Middletown, PA 17057		Container Size	1L									Cooler Temp: 2.4°C	Therm ID: _____										
Contact: Amy Borden		Preservative	ST									No. of Coolers: 1	Y N Initial										
Phone#: (717) 944-5541		ANALYSES/METHOD REQUESTED										Custody Seals Present?	<input type="checkbox"/>	<input type="checkbox"/>									
Project Name#: 2342374												Dioxin									(if present) Seals Intact?	<input type="checkbox"/>	<input type="checkbox"/>
Bill To: ALS Environmental																					Received on Ice?	<input type="checkbox"/>	<input type="checkbox"/>
TAT <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALSI approval and surcharges.																					COC Labels Complete/Accurate?	<input type="checkbox"/>	<input type="checkbox"/>
Date Required: _____ Approved By: _____												Cont. in Good Cond?	<input type="checkbox"/>	<input type="checkbox"/>									
Email? <input checked="" type="checkbox"/> -Y amy.borden@alsglobal.com												Correct Containers?	<input type="checkbox"/>	<input type="checkbox"/>									
Fax? <input type="checkbox"/> -Y No: _____												Correct Sample Volumes?	<input type="checkbox"/>	<input type="checkbox"/>									
Sample Description/Location (as it will appear on the lab report)		Sample Date	Time	*G or C	**Matrix	Enter Number of Containers Per Sample or Field Results Below.						Courier/Tracking #:	Sample/COC Comments										
2342374001	10/01/18	9:59	G	WT	1																		
Project Comments: Please update to report and invoice to Amy Borden and Kelly Wolfgang (kelly.wolfgang@alsglobal.com)				LOGGED BY (signature): _____				DATE: _____	Y	Data Deliverables		Standard <input type="checkbox"/>	Special Processing	State Samples Collected in									
				REVIEWED BY (signature): _____				DATE: _____	N			CLP-like <input type="checkbox"/>	USACE <input type="checkbox"/>	NY <input type="checkbox"/>									
Relinquished By / Company Name		Date	Time	Received By / Company Name		Date	Time					USACE <input type="checkbox"/>	Navy <input type="checkbox"/>	NJ <input type="checkbox"/>									
1. <i>[Signature]</i>		10/01/18	1345	2. <i>[Signature]</i>		10/01/18	15:15					NJ REDUCED <input type="checkbox"/>		NJ <input type="checkbox"/>									
3				4								Reportable to PADEP? <input type="checkbox"/>	Sample Disposal	PA <input type="checkbox"/>									
5				6								Yes <input type="checkbox"/>	Lab <input type="checkbox"/>	NC <input type="checkbox"/>									
7				8								PWSID # _____	Special <input type="checkbox"/>										
9				10								EDDS: Format Type _____											
*G=Grab; C=Composite      **Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OL=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wine; WW=Wastewater																							

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 10/11